

REMARKS

Claims 1-25, all the claims pending in the application, stand rejected. Claim 1 is amended.

Specification

The Examiner objects to the abstract of the disclosure “because it is more than one paragraph in length.” This objection is traversed because the abstract submitted in the previous amendment has only one paragraph. Applicants are resubmitting the abstract with additional language consistent with the amendments made to the claims. Withdrawal of the objection is respectfully requested.

Claim Rejections - 35 USC § 112

Claims 2 and 3 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite. This rejection is traversed for at least the following reasons.

The Examiner asserts that the claims are indefinite because the glass composition is recited in terms of both weight and molar percentages. The Examiner believes “the use of mixed weight percent and mole percent ranges in the claims does not allow for one of ordinary skill in the art to derive the ranges of the other essential and optional components or to understand the scope of the claim as a whole.”

Applicants Tables Demonstrate Clarity With Use of Both Measures

As shown in Table 1 of the original specification, one skilled in the art would specify the preform satisfying the requirements defined in claims 2 and 3 in which the glass composition is defined by using mixed weight percent and mole percent ranges. The specification is written by one skilled in the art for one skilled in the art. Applicants used this approach because it is commonplace in the relevant art and in the industry. Therefore, even though using mixed weight percent and mole percent ranges, the scope of the claims can be understood as a whole.

The foregoing is clear evidence by the Applicants that the practice of mixed weight percent and mole percent is accepted. To the extent that the Examiner disagrees, evidence that such practice is not accepted in the art by those skilled in the art is requested.

Conversion by One Skilled in the Art is Straightforward

The Examiner asserts that the use of mixed weight percent and mole percent ranges in the claims does not allow for one of ordinary skill in the art to derive the ranges of the other essential and optional compositions. As demonstrated subsequently, such conversion is straightforward and unambiguous.

One skilled in the art would first identify the contents of glass components for which the range is denoted "weight percent." Then, one skilled in the art would identify the contents of those glass components for which the range is denoted by "mole percent".

Taking claim 2 as an example, there are two cases mentioned, where BaO either exceeds 42 wt % or is equal to/less than 42 wt %. Where BaO is 43wt%, and in case of the preparation of 100 kg of the claimed glass, first the BaO content can be identified as 43 kg (=43 weight percent), the remaining content can be identified as 57 kg (=57 weight percent), and the specific content can be identified according to the percentages recited in claim 1. Therefore, those skilled in the art can derive the ranges of all components based on the mixed weight percent and mole percent ranges.

If the Examiner continues to have difficulty with this calculation, she is requested to state the precise area of ambiguity and provide an example as to how the calculation for claim 1, as explained above, would lead to two or more different results. Applicants respectfully submit that there is no ambiguity and that the calculation is definite. Applicants request the Examiner to call and discuss this issue, if it remains unclear.

Claim Rejections - 35 USC § 103

Claims 1-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mori et al., Japanese Patent Publication 11-199269 in view of Otsuka et al., U.S. Patent 6,784,128. This rejection is traversed for at least the following reasons.

Mori et al

The Examiner asserts that Mori et al. teach an optical glass in terms of wt percentages which appear to have overlapping ranges of components with claims 1-3, once converted, but

admits that Mori et al. fails to teach that the optical glass is an optical element or press-molding preform and that the glass is made and used by the methods as recited in claims 7-25.

Otsuka et al

The Examiner looks to Otsuka et al. for a teaching that phosphate glass can be used as optical elements and formed by press molding, based on the Abstract and the disclosure in column 1, line 10 to column 2, line 15.

Claim 1

In order to overcome the rejection, claim 1 is amended by specifying that the optical glass comprises no La₂O₃. This amendment is supported by the description in [0028] of the original specification.

Mori Does Not Teach Claimed Glass

An optical glass according to amended claim 1 is different from the glass disclosed in Mori et al. in the following points.

(i) An optical glass according to amended claim 1 comprises no La₂O₃. In contrast, the glass disclosed in Mori et al. comprises La₂O₃, as an essential component (see claim 3 and Table 1 in Mori et al.).

(ii) An optical glass according to amended claim 1 comprises MgO as an essential component, while the glass disclosed in Mori et al. optionally comprises MgO (see claim 3 and Table 1 in Mori et al.).

(iii) Table 1 of Mori et al. describe the glass compositions of Examples in terms of weight percent. Therefore, for comparison, Applicants have converted the glass compositions of the Examples of Mori et al. to those denoted by molar percent in Table A, submitted herewith.

As shown in Table A, Examples of Mori et al. do not have the glass composition defined in amended claim 1. Specifically, it is expressly stated in amended claim 1 that a sum of Li₂O, Na₂O, and K₂O exceeds 3 molar percent. By contrast, the Examples of Mori et al. comprise Li₂O, Na₂O, and K₂O at less than 3 molar percent in total.

Clearly, Mori et al fails to disclose the glass according to amended claim 1, and neither teaches nor suggests such glass. Otsuka does not remedy these deficiencies and, in fact, is only cited for a teaching that that a phosphate glass can be used in optical elements and formed by press molding.

Applicants respectfully submit that the invention according to amended claim 1 would not be obvious under 35 USC §103 (a) over Mori et al. and Otsuka et al or any of the other cited references.

Claims 2-25

These claims would be patentable at least for the reasons given for parent claim 1.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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